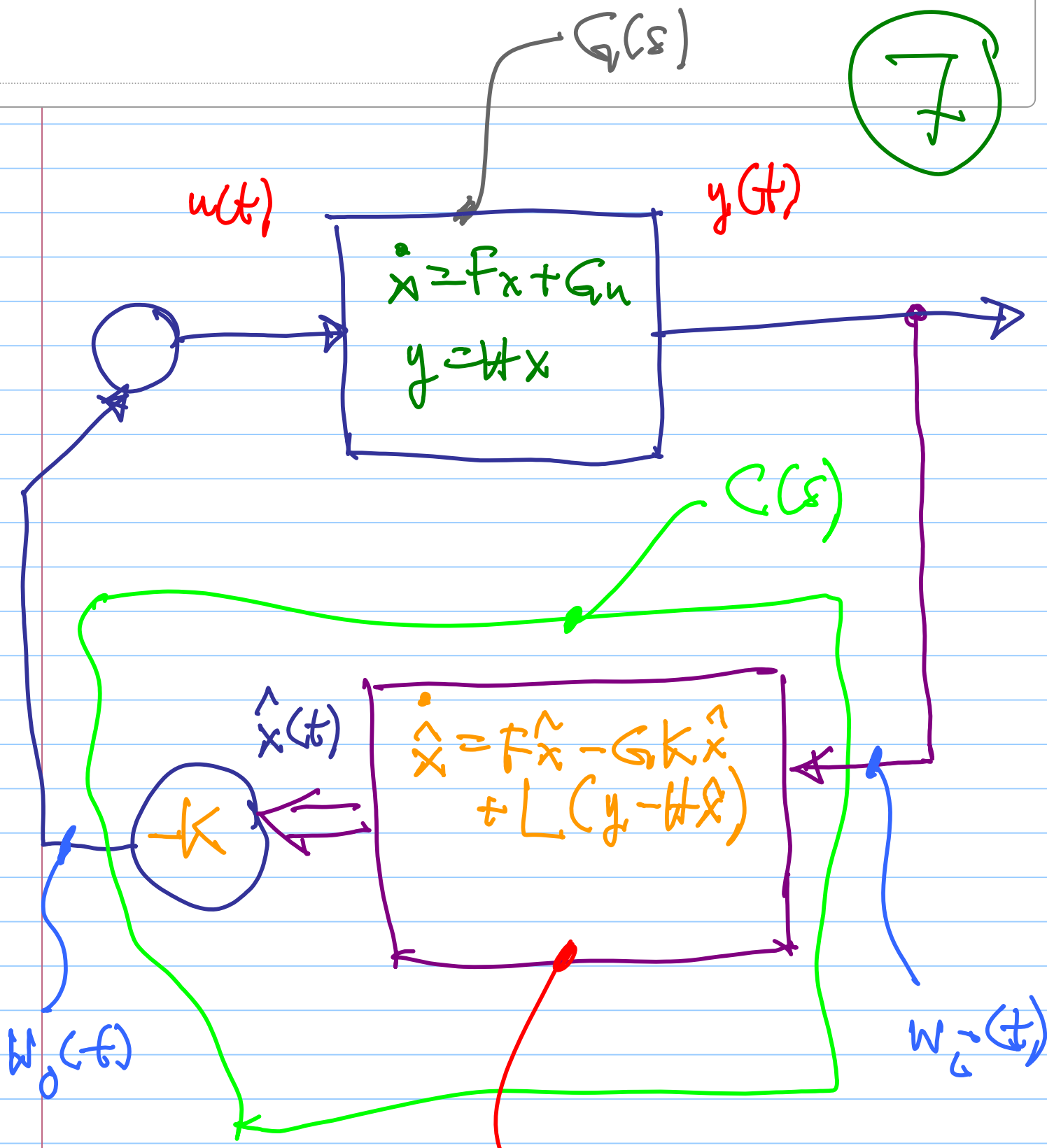

$$\dot{\hat{x}} = (F - GK - LH)\hat{x} + Ly$$

$$u = -K\hat{x}$$

$$C(s) = \frac{W_0(s)}{W_i(s)}$$

$$= -K\left\{sI - \begin{bmatrix} F - GK \\ -LH \end{bmatrix}\right\}^{-1} L$$

Compensator / Controller

[comprising State-Observer
+ State-Fb using $\hat{x}$]